

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

BPROTOCOL FOUNDATION and
LOCALCOIN LTD.,

Plaintiffs,

v.

UNIVERSAL NAVIGATION INC. d/b/a
UNISWAP LABS, and UNISWAP
FOUNDATION,

Defendants.

Civil Action No. 25-cv-4214 (JGK)

AMENDED COMPLAINT

JURY TRIAL DEMANDED

Plaintiffs Bprotocol Foundation (“Bprotocol”) and LocalCoin Ltd. (“LocalCoin,” and together with Bprotocol, “Plaintiffs”) bring this action for patent infringement against Defendants Universal Navigation Inc. (“Uniswap Labs”) and Uniswap Foundation (together with Uniswap Labs, “Defendants” or “Uniswap”) as follows:

NATURE OF THE ACTION

1. This case is about an innovative platform that uses “smart tokens”—a fundamental technology underlying modern cryptocurrency and Decentralized Finance (“DeFi”) systems—in an unconventional way to implement DeFi that is both efficient and scalable. Plaintiffs invented and patented a platform that uses a special type of “smart token” incorporating customized, self-executing computer code, called “smart contracts,” to solve a problem that uniquely impacted the use of smart tokens as cryptocurrencies.¹ Specifically, as blockchain technology evolved to

¹ A “smart contract” is a computer program that can automatically process transactions based on a coded set of rules and logic that specify conditions governing those transactions, without needing a middleman like a lawyer or bank to oversee the process. It typically runs on a blockchain network such that the computer code is visible to everyone and cannot be changed once it is deployed. The term “smart token,” discussed in more detail *infra*, was used in Bprotocol’s 2017 whitepaper to describe the specific type of token used in the platform that Plaintiffs invented.

support complex, programmable smart contracts, thousands of different types of user-generated smart tokens began proliferating. Many of these smart tokens never grew beyond niche cryptocurrencies, with limited adoption by certain communities but no mainstream traction. These niche cryptocurrencies often presented liquidity problems that hindered investors from buying and selling them. The invention of the Asserted Patents² solved this problem through an automated market-making system that uses a new type of smart token, now commonly referred to as a “Liquidity Provider Token” or “LP Token,” that forms the basis for fully automated and decentralized trading and price discovery using any cryptocurrency on the blockchain. In addition to solving problems uniquely associated with niche smart tokens, the invention unlocked tremendous opportunity for a highly efficient, truly decentralized exchange by eliminating the need for an intermediary to facilitate transactions and reducing the computational cost of processing transactions on the blockchain.

2. Historically, the financial sector relied exclusively on intermediated, centralized exchanges to trade and exchange assets. These exchanges include conventional stock exchanges like the New York Stock Exchange, currency exchanges like Forex, and commodity futures exchanges like the Chicago Mercantile Exchange. The success of these exchanges—as well as their decentralized cousins—depends in part on the *liquidity* of traded assets on an exchange—*i.e.*, the extent to which it is possible to buy and sell the assets at large volumes without significantly impacting their price. Unlike the systems described and claimed in the Asserted Patents,

However, the term is now more commonly used to mean a cryptocurrency that is programmed with a specific smart contract or set of smart contracts that dictate its behavior. This Complaint uses the term “smart token” to refer to the latter, broader meaning, and uses the term “LP Token” to refer to the specific type of smart token invented by Plaintiffs.

² The Asserted Patents here are U.S. Patent Nos. 11,107,049 (“’049 patent”) and 11,574,291 (“’291 patent”).

conventional exchanges use an “order book” of buy and sell orders to match buyers to sellers and execute trades for specific assets. In conventional centralized exchanges, liquidity is often managed using market makers, which maintain large inventories of assets and act as intermediaries willing to both buy and sell at quoted prices based on historical transactions. A financial institution may itself act as a market maker on its own exchange (as in the case of some currency exchanges), or third-party market makers may operate on a centralized exchange (as is often the case in stock exchanges). Market makers ensure that buyers and sellers alike can transact with each other on the exchange at any time, and at relatively stable prices. To this day, conventional exchanges rely on professional market makers to supply liquidity for order-book-based trading.

3. In the context of cryptocurrency, however, the order-book model and professional market makers operating on conventional exchanges can be ineffective and unreliable. Conventional centralized exchanges frequently do not list many of the user-generated, lower volume, niche cryptocurrencies based on smart tokens—at least in part because price discovery is difficult to achieve without a critical mass of trading volume. And larger market makers are often uninterested in supplying liquidity for these transactions because of the risk they will be unable to trade out of positions. Furthermore, centralized exchanges require separate settlement processes to transfer asset ownership, creating risks that can be technically eliminated when trading is executed on the blockchain.

4. The order-book model encountered similar challenges in the DeFi context. Early DeFi exchanges still relied on the order-book model to match buyers and sellers, but instead of using a centralized exchange to manage the order book, they used smart contracts to automate the matching process algorithmically on the blockchain. For low volume, user-generated cryptocurrencies, however, the low liquidity and lack of market makers inhibited trading because

there were insufficient orders at overlapping prices to match. Further, these early DeFi exchanges were often far more costly than their centralized counterparts because of the nature of the blockchain. Because every transaction on the blockchain is recorded using a computational process executing on the blockchain, even listing a buy or sell order consumes resources, and continuously monitoring and updating the order book to match buy and sell orders can rapidly increase the cost associated with DeFi exchanges based on the order-book model.

5. The invention of the Asserted Patents offers a technological solution to these and other problems inherent in both conventional centralized exchanges, as well as early DeFi exchanges based on the conventional order-book model. Specifically, the invention uses a special, unconventional smart contract and a new type of smart token (LP Token) to create a fully automated, algorithmic, code-based market maker that operates in a radically different way from conventional market makers. This “automated market maker” is programmed via smart contracts to mint LP Tokens as receipts in exchange for cryptocurrencies deposited into a “liquidity pool” managed and operated by the smart contract on the blockchain. The LP Tokens encourage owners of a cryptocurrency to contribute their assets into the liquidity pool. The volume of issued LP Tokens and the reserve of cryptocurrency tokens in the liquidity pool can then be used by the automatically executing smart contract to continuously and instantaneously compute a price for and process any cryptocurrency transaction at any volume, without relying on order books, order matching, or conventional price discovery based on historical pricing information. This invention is a breakthrough in technology that enabled several decentralized exchange models popular today, and is now commonly known as the “constant product automated market maker” (“CPAMM”).

6. At root, Plaintiffs’ invention uses new implementations of smart token and smart contract technology to improve the functionality of the blockchain by solving problems uniquely

associated with smart tokens (*e.g.*, the difficulty of managing liquidity and fulfilling transactions for large numbers of user-generated cryptocurrencies) and with the operation of decentralized exchanges on the blockchain (*e.g.*, the high computation costs associated with an automated, smart contract-based order-book model). Plaintiffs' technical achievement does not merely automate the function of conventional order books and market makers using a generic computer and blockchain implementation. To the contrary, rather than merely scaling or automating the conventional approaches, Plaintiffs created a novel, unconventional technological process, radically different from the order-book- and market-maker-based approaches employed by conventional exchanges. Plaintiffs' invention enables automated, algorithmic market making using "on-chain" smart-contract-operated liquidity pools, without the need for an intermediary acting as a market maker and quoting prices based on historical transactions.

7. The provisional patent application directed to Plaintiffs' invention was filed in January 2017, and subsequently, the Plaintiffs released a revolutionary DeFi protocol known as the Bancor Protocol, which embodied the invention.³ Months later, Uniswap Labs began developing a competing protocol, the Uniswap Protocol, which incorporated Plaintiffs' patented invention as a CPAMM that forms a central part of the Uniswap Protocol's implementation. The Uniswap Protocol has since grown into an enterprise worth billions. Uniswap Foundation was later created to promote the Uniswap Protocol and encourage others to create infringing systems. With this suit, Plaintiffs seek compensation and injunctive relief for Uniswap Labs' unlicensed use and Uniswap Foundation's indirect infringement.

³ The named inventors on the Asserted Patents here are Eyal Hertzog, Guy Benartzi, Galia Benartzi, and Yehuda Levi (hereinafter referred to as the "Inventors").

8. Defendants have used the Plaintiffs' patented invention as the backbone of the Uniswap Protocol and thereby achieved trillions of dollars in trade volume. Uniswap Labs launched, without a license, v1 of the Uniswap Protocol in November 2018. It has continually operated an infringing CPAMM via the Uniswap Interface since that time, most recently announcing the launch of v4. Defendants have continually infringed Bprotocol and LocalCoin's patented inventions through the Uniswap Interface and their joint efforts to encourage numerous others to engage in infringing uses of the Uniswap Protocol.

THE PARTIES

9. Plaintiff Bprotocol is a non-profit foundation formed under Swiss law. Along with LocalCoin, Bprotocol is the joint owner and assignee of the '049 patent and the '291 patent.

10. Plaintiff LocalCoin is a private corporation formed under Israeli law. Along with Bprotocol, LocalCoin is the joint owner and assignee of the '049 patent and the '291 patent.

11. Defendant Uniswap Labs is a corporation formed under Delaware law. On information and belief, Uniswap Labs has its principal place of business in Manhattan at 228 Park Ave S, PMB 44753, New York, NY 10003. Uniswap Labs developed, released and now maintains and regularly updates the Uniswap Protocol, a platform for decentralized cryptocurrency exchange. Uniswap Labs also developed, maintains, and makes available the Uniswap Interface, a web-based interface for exchanging cryptocurrencies using the Uniswap Protocol.

12. Defendant Uniswap Foundation is a non-profit organization formed under Delaware law. On information and belief, Uniswap Foundation has its principal place of business in Manhattan at 228 Park Ave S, PMB 44753, New York, NY 10003. Uniswap Foundation provides grants to support the growth of the Uniswap ecosystem, including to entities such as OpenZeppelin, Brink.Trade, Atrium Academy, and Gelato, thereby inducing these and other third parties to implement and build upon the Uniswap Protocol.

JURISDICTION AND VENUE

13. This is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*

14. This Court has subject matter jurisdiction over the matters asserted herein under 28 U.S.C. §§ 1331 and 1338(a).

15. This Court has personal jurisdiction over Defendants because Defendants committed acts in this District that give rise to all acts of infringement asserted herein. This Court also has personal jurisdiction over Defendants Uniswap Labs and Uniswap Foundation because they have substantial, systematic, and continuous contacts with this District.

16. Under 28 U.S.C. §§ 1391 and 1400(b), venue is proper in this District because a substantial part of the events or omissions giving rise to the claims occurred in this District, because Defendants have committed acts of infringement in this district, and because Defendants have a regular and established place of business in this District and/or reside in this District.

FACTUAL BACKGROUND

I. “SMART CONTRACTS” GIVE RISE TO ALTCOINS AND AN OPPORTUNITY TO ACHIEVE DECENTRALIZED FINANCE

A. Early Decentralized Exchanges Struggle To Gain A Foothold In Cryptocurrency Markets

17. For most of modern history, centralized institutions have comprised the backbone of financial infrastructure. Centralized financial services facilitate financial transactions by serving as trusted intermediaries. For instance, securities exchanges such as NASDAQ and the New York Stock Exchange stand as trusted third parties in the middle of buyers and sellers interested in the same security and then report prices based on transactions they execute.

18. The advent of cryptocurrencies (or “crypto”), such as Bitcoin, fundamentally disrupted the financial world and sparked a revolution toward DeFi. DeFi aims to cut out the

middleman and instead process and record transactions using cryptographic verification on decentralized distributed blockchains. It aims, through blockchain technology, to allow people and businesses to conduct financial transactions directly with each other without the need to trust or pay any central authority to validate or oversee their transactions. In the long run, DeFi aims to reduce financial transaction costs and democratize finance by eliminating large, concentrated intermediaries.

19. Nevertheless, for years, crypto was almost exclusively traded using centralized exchanges. These exchanges use a standard order-book model. They allow users to buy, sell, and swap crypto via an online platform, and continue to operate today. When a typical transaction occurs between customers on a centralized exchange, it is not recorded on the blockchain. Instead, it is arranged and recorded using the exchange's separate systems and ledgers.

20. Centralized exchanges pose several problems that conflict with the goals of DeFi. For instance, centralized exchanges are typically profit-seeking enterprises with incentives to keep transaction fees high. Centralized exchanges likewise owe duties to shareholders rather than users, creating economic incentives contrary to the goal of user governance. Centralized exchanges also generally take custody of users' crypto, thereby creating risks that the exchange will misuse the assets or embroil users in a bankruptcy proceeding—as occurred when FTX collapsed. Finally, centralized exchanges generally support only a limited number of tokens and users satisfying particular geographic and other limitations. All these issues constrain the opportunities offered by blockchain technology and smart contracts and stand in the way of the universal, open access to financial markets and services that are generally expected in the crypto market.

21. Decentralized exchanges (“DEXs”) began to be conceptualized around 2015 as a solution to the above problems. Theoretically, DEXs could enable transactions without the need

for a centralized intermediary, thereby enhancing security, reducing the risk of fraud and theft, providing universal access to crypto markets, enhancing user privacy, offering support for a wider variety of tokens and markets (and thereby facilitating the growth and expansion of crypto for a wide variety of applications), and providing simultaneous trade execution and settlement. DEXs could thus facilitate the growth of tokenized assets and create opportunities for new users and new business.

22. But by early 2016, DEXs still provided only the limited functionality of an order book, attempting to match individual buy and sell orders. This approach failed to solve the “Coincidence of Wants” problem, wherein transactions can only be fulfilled when a buy order for a specific quantity and price coincides with a matching sell order. Such matches happen unreliably and by happenstance. Order-book DEXs were also practically difficult to implement at scale on the blockchain: because each interaction with the blockchain (including recording new orders, attempting to match buy and sell orders, and updating the order book to reflect completed transactions) incurs a cost, called a “gas fee,” as the order book increased in size, the cost of maintaining and operating it grew increasingly larger. Centralized exchanges have solutions to both of these problems. They solve the “Coincidence of Wants” problem by using “market makers” that maintain an inventory of tradeable asset and stand ready to buy and sell at quoted prices, thereby streamlining transactions and absorbing high trade-volumes without significant price volatility. And they solve the scalability problem by using centralized servers to efficiently store orders and implement a matching algorithm. As a result, crypto transactions still primarily took place on centralized exchanges, and DEXs had limited utility and applicability.

B. Smart Contracts Encourage The Proliferation Of New Altcoins, Which Lack Support On Centralized Exchanges

23. The most direct impetus for the inventions claimed in the Asserted Patents was the proliferation of many new types of crypto assets beyond Bitcoin, often referred to as “altcoins,” in the years following Bitcoin’s release in 2009. These altcoins often had unique features, names, and purposes, but also frequently had low rates of adoption outside of a small community of early adopters.

24. A new blockchain technology called “smart contracts” made it possible for any blockchain user to create and distribute new altcoins. The Bitcoin blockchain had limitations that only allowed limited and relatively simple program code (*i.e.*, software) to be stored and executed. Subsequent blockchains sought to remove these limitations and allow more complex and versatile program code to be stored and run “on chain.” In particular, the Ethereum blockchain became successful as the first to overcome this limitation and offer programming built into the platform. Ethereum did this via the creation of smart contracts—*i.e.*, programs (including user-generated programs) that are stored and can execute transactions directly on the blockchain. Ethereum’s smart-contract programming capabilities are “Turing complete,” which means they have a fully functional programming language capable of implementing any computational task.

25. The programming versatility afforded by smart contracts vastly increased the potential utility of altcoins and the ease of creating new altcoins and thus spiked the rate of altcoins’ development. For example, one of the early programs created for Ethereum was a template of code to create a new crypto token and maintain the ledger tracking transactions in that new token, all within a smart contract on the Ethereum blockchain. This template, known as ERC-20, made it easy for anyone to create a new crypto asset token. ERC-20 thus spearheaded a rapid expansion

in the number and types of “altcoins” available on the Ethereum blockchain, as well as on other chains that followed suit with similar templates.

26. The rise of altcoins illuminated a core problem associated with centralized exchanges. To benefit from the wide variety of altcoins, users needed a way to obtain them. But centralized exchanges were not equipped to effectively support transactions involving the ever-changing assortment of altcoins. While centralized exchanges could facilitate transactions for high-volume cryptocurrencies such as Bitcoin and Ether (the native token of the Ethereum blockchain), they typically offered only a limited selection of altcoins for trade. And because most altcoins had low rates of adoption, the “Coincidence of Wants” problem entailed that matching buy and sell orders between two interested counterparties was impractical as the foundation for widespread trading.

27. Thus, without a liquid exchange market or price discovery mechanism, altcoins became isolated islands of value. They could not easily be traded for other tokens, and their market value could not easily be determined, hindering their widespread use and adoption. This problem persisted until Plaintiffs, relying on decades of experience and insight, solved it with the inventions claimed in the Asserted Patents, and the implementation of those inventions in the Bancor Protocol.

II. THE INVENTORS DESIGN AN LP TOKEN SYSTEM ON THE BLOCKCHAIN THAT ENABLES ALTCOIN TRADING AND DECENTRALIZED EXCHANGES

A. The Inventors’ Prior Experience Informs Their Approach

28. Eyal Hertzog, a co-founder of the Bancor Protocol, had previously co-founded MetaCafe, a video-sharing platform that once rivaled YouTube. But whereas MetaCafe focused on centralized curation of the most popular videos, YouTube had an open system which enabled users to find content tailored to their interests. The user-generated content and open system of

YouTube ultimately led to mass user-engagement with niche content that dwarfed user engagement with MetaCafe's curated feeds. From this experience, Hertzog took away a profound insight: By nature, centralized systems stifle and fail to capitalize on user-generated content. Hertzog understood this universe of user-generated content as the "long tail" of video sharing, or the niche content that collectively attracts orders of magnitude more engagement than the most popular videos.

29. As a result, Hertzog's interest in decentralized systems deepened. He learned about global monetary systems and encountered the works of Bernard Lietaer, a prominent advocate of complementary currencies. Lietaer believed that communities benefit from creating their own local currencies. Thus, when Hertzog encountered Bitcoin several years after its launch, he was in a unique position to recognize it as a user-generated currency. He knew there would be a long tail in user-generated digital currencies as well.

30. Hertzog applied this insight at his next company, AppCoin, which created a platform designed to enable communities to create and trade their own currencies. Hertzog was joined by the other Inventors: Guy Benartzi, Galia Benartzi, and Yehuda Levi, whom he met in Silicon Valley in the 2000s. Guy Benartzi brought experience in developing and scaling digital platforms. Galia Benartzi contributed expertise in business development and marketing and an education in international economics. Yehuda Levi brought decades of engineering experience.

31. AppCoin allowed community leaders to create digital currencies (not on blockchains) and facilitated a mainstream marketplace for those currencies. As one example, AppCoin facilitated thousands of daily transactions using Hearts, a currency created for a community of mothers in Israel. The community exchanged Hearts for goods and services such

as toys, second-hand clothes, and strollers. Relative to the size of the community of mothers that used it, the user engagement and adoption of Hearts was extraordinary.

32. Despite their initial success, the community currencies enabled by AppCoin faced the same critical flaw as altcoins—they were isolated. Although AppCoin focused on the user relationship to the marketplace, it failed to provide a satisfactory exchange of currencies themselves. Hearts proved an effective medium of exchange for mothers in Israel, but it was not easy to exchange Hearts for other community currencies, shekels, U.S. dollars, or Bitcoin.

33. Locked within their original contexts, community currencies such as Hearts were useful only to their original community and cut off from the transformative potential of connection. AppCoin attempted to implement an exchange function that empowered individuals within each community to set exchange rates, but that implementation proved too slow, too centralized, and too cumbersome to facilitate liquid exchange markets and price discovery. Over time, the value of these currencies deteriorated in the minds of their communities.

B. Plaintiffs Invent A New LP Token System That Solves The Challenges Of Altcoins And The Limitations of Conventional DEXs

34. In 2015, the Inventors set out to address the liquidity and price discovery challenges surrounding altcoins. The Inventors knew altcoins could become a huge industry based on their prior experience with the “long tail” of user-generated content and community currencies. From this experience, the Inventors knew that the only long-term solution would be to create an impartial, algorithmic market maker.

35. In 2017, Plaintiffs unveiled their invention: A self-executing smart token system for the blockchain that uses smart contracts to exchange one crypto asset for another while enabling continuous liquidity, instant conversions, and automated price discovery without the need for a

centralized exchange or individual market makers. Plaintiffs' system is now popularly known as a "constant product automated market maker" (CPAMM).

36. The CPAMM system is based on a series of smart contracts that hold reserve assets (now commonly referred to as "liquidity pools"), and on the creation and use of a new type of smart token (now commonly referred to as a "Liquidity Provider token" or "LP Token"), the value of which floats depending on the reserves in the pool. Liquidity providers are incentivized to contribute reserves in exchange for LP Tokens and can exchange LP Tokens for tokens held in the liquidity pool. Multiple liquidity pools can be created, each comprising one or more different assets. All transactions (including adding liquidity, removing liquidity, and swapping tokens) may be implemented relative to the conversion algorithm between LP Tokens and reserve assets, and executed as code in the smart contract on the blockchain.

37. Plaintiffs' system continuously recalculates the price of an LP Token based on the total volume of LP Tokens in circulation, the reserve(s) of one or more assets in the liquidity pool, and a predefined reserve ratio constant that determines the ratio between the reserve balance and the market cap of the LP Token. The algorithm can be expressed mathematically as $T_p = T_t / (T_r * R_r)$, where T_p is the incremental price of an LP Token, T_t is the total volume of the LP Token in circulation, T_r is the volume of assets in reserve, and R_r is the reserve ratio constant. Because the system can process every transaction instantaneously using this algorithm, instead of storing and monitoring numerous buy and sell orders in an order book, it is far more computationally efficient than the earlier DEXs based on the conventional order-book model. As a result, the system provides a far more practical, scalable alternative to conventional order-book DEXs.

38. Plaintiffs' system came to be called CPAMM because, in its most straightforward application, where each liquidity pool holds two assets in reserve at the same reserve ratio, the

product of the two assets in reserve is a constant. In other words, for two assets X and Y held in reserve with reserve volumes x and y , respectively, it must be true at any given time that $x * y = k$ (where k is a constant).

39. The claimed implementation enables adding liquidity to a pool using one asset (by computing the price per LP token as above), adding liquidity using more than one asset (implemented as two or more immediately consecutive liquidity addition transactions), removing liquidity using one or more assets (by inverting the relationship above), and swapping two assets in the pool (implemented as one transaction adding liquidity for the first asset, and a second transaction removing liquidity for the second asset).

40. As the Asserted Patents explain, this system provides a technological solution to the challenge of trading low-volume digital currencies, a problem that uniquely arose in the context of smart tokens on the blockchain. They explain that, in the wake of “Tokens using virtual currency networks, shortcomings regarding the ability to determine the value of such Tokens were identified.”⁴ “Traditionally, value of a currency is determined by the price of a transaction between willing parties,” but “employing this method on an unlimited variety of Token types is not viable.”⁵ “In addition, many freshly issued Token types have only a limited trading volume or none at all,” which “will increase the difficulties entailed in evaluating an unlimited variety of Token types via a FOREX method.”⁶ From here, the Asserted Patents introduce the CPAMM system and explain that “the inventive method allows determining the Token’s value without reliance on a transaction between two willing parties,” as conventionally performed by centralized exchanges.⁷ And

⁴ Ex. A, ’049 patent, 2:13-15. The same or similar disclosures appear in the ’291 patent’s specification.

⁵ *Id.*, 2:16-22.

⁶ *Id.*, 2:23-28.

⁷ *Id.*, 6:22-25.

although the exemplary embodiments describe CPAMMs where each liquidity pool holds one token type in reserve and LP tokens are exchanged for the singular reserve token, the Asserted Patents also explain that “the exchanges can take place between more than two types of tokens and/or use multiple reserves of multiple types of tokens.”⁸

41. The Asserted Patents also explain that the claimed solution is unconventional because it “introduce[s] a new model for price discovery and market liquidity,” where “[e]xchange rates are calculated by the [smart] contract, which offers a standard API for immediate conversions to other tokens held by the contract for that purpose.”⁹ Thus, the invention provides “a radically different ecosystem” from “[t]raditional exchanges.”¹⁰ Whereas a traditional exchange uses an “order book” to “establish[] the market depth which provides market liquidity for the trade assets,” the claimed invention provides liquidity “from a reserve held by a smart-contract, rather than from a 3rd party.”¹¹ The invention thus provides a novel, unconventional solution to “the Coincidence of wants problem (CoW),” which previously “was never addressed for currency trading since the required technology (or trust) was not available.”¹² Specifically, the claimed invention uses a “digital token which holds reserves with a set of immutable instructions on how to offer conversion between itself and the reserve” to “solv[e] the CoW problem.”¹³ Plaintiffs’ invention further “continuously calculate[s]” the value of an asset, “increasing its value with each conversion to the token, and decreasing the value when the token is converted to another,” so that price discovery is not dependent on “traders participation,” unlike conventional exchanges.¹⁴ These “technological

⁸ *Id.*, 22:29-40.

⁹ *Id.*, 13:57-62.

¹⁰ *Id.*, 13:63-67.

¹¹ *Id.*, 14:4-8.

¹² *Id.*, 14:8-13.

¹³ *Id.*, 14:13-19.

¹⁴ *Id.*, 14:20-26.

advancement[s]” allow “token conversion and price discovery [to] be done using a radically more efficient model.”¹⁵

42. Finally, the Asserted Patents explain that the claimed invention improves blockchain technology for decentralized exchanges, including because (1) the invention provides a “transparent” means of exchange “[a]s it can be viewed by various (usually all) participants of the blockchain network”; (2) the invention “dramatically reduces the computer resources that should [be] allocated with the transactions between different coins,” particularly in comparison to the early order-book DEXs described above; and (3) the invention “provides a robust system for currency exchange (as it does not have a single point of failure).”¹⁶

C. Plaintiffs Exemplify Their Invention Via The Bancor Protocol

43. Plaintiffs implemented their smart token via the Bancor Protocol. Recall that, depending on the use case, Plaintiffs’ invention enables liquidity pools with full or only partial reserves, and that those reserves may be comprised of one or many different crypto assets. For its implementation of the CPAMM use-case, the Bancor Protocol would use a set-up in which every liquidity pool had 100% reserves (so the total value of a pool’s LP tokens would equal the value of the pool’s reserves), and each liquidity pool would have exactly two assets.

44. To start, Plaintiffs created a new token, the Bancor Network Token (“BNT”), which functioned as the LP Token and was one of the two assets in every liquidity pool, serving as a common reserve asset throughout the system. The other asset would differ for every pool. This way, anyone could add a new token to the system by creating a new pool with reserve assets comprised of that new token and BNT. As soon as they did, any other token in the network (call

¹⁵ *Id.*, 14:60-63.

¹⁶ *Id.*, 13:42-51.

it “token X”) could instantly be traded for the new token through an automated two-step trade by trading token X for BNT, and then BNT for the new token. A small fee from each exchange would be provided to holders of the LP Tokens, thereby incentivizing outside liquidity providers to contribute reserves to the liquidity pools. If the price set by the CPAMM for any crypto in the liquidity pool deviated from the price set in other markets, arbitragers would be incentivized to capitalize on that deviation, thus ensuring that the CPAMM reflected the actual market price for X and Y.

45. On May 30, 2017, Plaintiff Bprotocol (whose name stands for Bancor Protocol) released a whitepaper authored by three of the Inventors and titled “Bancor Protocol: Continuous Liquidity and Asynchronous Price Discovery for Tokens through their Smart Contracts; aka ‘Smart Tokens.’”¹⁷ The abstract summarized the invention:

The Bancor protocol enables built-in price discovery and a liquidity mechanism for tokens on smart contract blockchains. These “smart tokens” hold one or more other tokens in reserve, and enable any party to instantly purchase or liquidate the smart token in exchange for one of its reserve tokens, directly through the smart token’s contract, at a continuously calculated price, according to a formula which balances buy and sell volumes.¹⁸

46. As an implementation of the invention, the Bancor Protocol solved a “critical barrier” in the “current exchange model for currencies/assets”—namely, the fact that “a certain volume of trading activity [is required] to achieve market-liquidity.”¹⁹ By using “smart contract blockchains,” tokens could be “programmatically” designed and managed to “hold balances of

¹⁷ Ex. E, Bancor whitepaper. The May 30, 2017 whitepaper built on earlier drafts from February and April 2017. As noted above, the whitepaper used the term “smart token” to refer to the LP Token of the invention, and quotes from the whitepaper use that term when referring to LP Tokens. However, the term has come to be used more generally to refer to a cryptocurrency that is programmed with a specific smart contract or set of smart contracts that dictate its behavior. Under this definition, the LP token of the invention is a type of “smart token.”

¹⁸ *Id.* at 2.

¹⁹ *Id.*

other tokens (i.e. ‘reserves’), directly through their smart contracts.”²⁰ These “new technological capabilities” offered potential “solutions for converting one currency to another and determining market prices.”²¹ In the whitepaper, Plaintiffs described their technology, incorporating smart contracts implementing a CPAMM into cryptocurrency tokens, as “smart tokens” (LP Tokens).²² Plaintiffs explained that “smart tokens” (LP Tokens) are “a technological solution to the coincidence-of-wants problem for asset exchange, rather than a labor-based solution as used in traditional (or decentralized) exchanges.”²³ Where conventional exchanges relied on “professional market makers who provide liquidity and facilitate collaborative price discovery,” “smart tokens” (LP Tokens) represented an alternative new “technological solution to the existing coincidence of wants problem.”²⁴ As a result, Plaintiffs envisioned that the Bancor Protocol could “standardize[] smart tokens, enabling asynchronous price discovery and continuous liquidity for cryptocurrencies” and “establish the first decentralized interconnected currency exchange system which does not rely on matching bid and ask orders,” and “the first technological solution for the Coincidence of Wants *Problem* in asset exchange.”²⁵

47. In sum, Plaintiffs invented a computationally efficient, fully automated platform for creating liquid markets to trade any cryptocurrency for another without centralized exchanges or individual market makers. They invented a novel blockchain system that creates a code-based decentralized exchange “on chain,” in the form of a smart contract, with continuous liquidity and instantaneous price discovery, providing a more efficient model for price discovery, and a more

²⁰ *Id.*

²¹ *Id.*

²² *Id.* at 3.

²³ *Id.* at 7 (emphasis removed).

²⁴ *Id.*

²⁵ *Id.* at 12 (emphasis removed).

scalable and efficient DEX, than conventional approaches. This represented a paradigm shift in DeFi, as it eliminated the need for traditional order books and associated market makers on centralized exchanges. In their place, automated liquidity pools facilitated decentralized token exchanges regardless of trading volume while ensuring accurate price discovery. This created a means of exchange and valuation for altcoins, which otherwise lacked any such means.

D. The Asserted Patents

48. To protect the inventions, a provisional patent application was filed on January 8, 2017 and the two Asserted Patents claim priority to the January 2017 provisional. A true and correct copy of the '049 patent is attached hereto as Exhibit A. A true and correct copy of the '291 patent is attached hereto as Exhibit B.

49. Plaintiffs applied for the '049 patent on November 19, 2020. The non-provisional patent application for the '049 patent was published as U.S. Patent App. Publication No. 2021/0073755 on March 11, 2021. It issued on August 31, 2021, and is titled "Methods for exchanging and evaluating virtual currency." The '049 patent claims priority to Provisional Application No. 62/443,722, filed on January 8, 2017. Plaintiffs continue to hold all rights, title, and interest in the '049 patent.

50. In allowing the '049 patent to issue, the examiner noted that the claims were inventive because the traditional currency approach of managing FOREX exchange rates on an unlimited variety of cryptocurrency token types was not viable, especially when many freshly issued token types had only a limited trading volume or none at all.²⁶ The examiner added that none of the prior art references taught the "specific technique of performing an execution of a transaction by determining a price of the first cryptocurrency token based on a total amount of the

²⁶ Ex. C, '049 Notice of Allowance and Examiner's Amendment, July 21, 2021.

first cryptocurrency token in circulation, a total reserve of a second cryptocurrency token, and a reserve ratio constant.”²⁷

51. Plaintiffs applied for the ’291 patent on January 8, 2018. The non-provisional patent application for the ’291 patent was published as U.S. Patent App. Publication No. 2020/0027067 on January 23, 2020. It issued on February 7, 2023, and is titled “Methods for exchanging and evaluating virtual currency.” The ’291 patent claims priority to Provisional Application No. 62/443,722, filed on January 8, 2017. Plaintiffs continue to hold all rights, title, and interest in the ’291 patent.

52. In allowing the ’291 patent to issue, the examiner noted that the claims were inventive because they were “directed to exchanging one type of smart-contract generated crypto-currency tokens to another type of smart-contract generated crypto-currency tokens based on a determination of whether the smart-contract that generates the tokens [was] valid and transferring the tokens between accounts after calculating quantity and value of the crypto-currency tokens using [a] specific computation.”²⁸ The examiner added that none of the prior art taught the combination of features recited in the ’291 patent.²⁹

III. PLAINTIFFS SHARE THE BANCOR PROTOCOL WITH THE WORLD

53. Patent applications in hand, Plaintiffs set out to share the Bancor Protocol and CPAMM concepts at several cryptocurrency conferences while at the same time building a platform to use these inventions. At the Community Ethereum Development Conference (“EDCON”) in Paris in February 2017, Hertzog introduced the Bancor Protocol to all in attendance, which included influential members of Ethereum, such as its co-founder Vitalik

²⁷ *Id.*

²⁸ Ex. D, ’291 Notice of Allowance and Examiner’s Amendment, January 6, 2023.

²⁹ *Id.*

Buterin. Also at EDCON, the Inventors met individuals associated with Ethereum and Consensys, a blockchain software company with close ties to Ethereum.

54. Bprotocol's 2017 whitepaper attracted some of the world's leading intellects to the Bancor project. For example, Bernard Lietaer, whose ideas had earlier reached and inspired the Inventors, joined the project, later becoming the President and Chief Monetary Officer. Lietaer had enjoyed a diverse career in money, working at Belgium's central bank, co-founding and managing a large currency fund, teaching as a university professor, and consulting for private and public institutions. He is notably credited as designing the precursor to the Euro currency.

55. Once the functionality and security of the Bancor Protocol was ensured, the BNT token was activated in June 2017. This event launched BNT, the asset that would serve as the common reserve asset on the Bancor Protocol. The event received record-breaking interest among the crypto community and marked the initiation of an innovative idea that would fundamentally alter the landscape for trading on a decentralized exchange.

56. Shortly thereafter, Plaintiffs and Gnosis, another blockchain with its own native token (GNO), created the first-ever liquidity pool using BNT and GNO. This marked the first decentralized exchange using a CPAMM.

IV. UNISWAP ARISES AND PROFITS HANDSOMELY BY INFRINGING PLAINTIFFS' PATENTS

A. Vitalik Buterin Nurtures Uniswap Over The Bancor Protocol

57. Recognizing the transformative nature of their innovation, the Inventors reached out to the co-founder of Ethereum, Vitalik Buterin, who published the original whitepaper for Ethereum in 2013. That white paper envisioned decentralized applications, and specifically decentralized exchanges, and the Inventors hoped Buterin would be excited to learn of their

invention. The Inventors arranged for some of them to meet Buterin in person on or around September 18, 2017 and at that meeting described the CPAMM design and the Bancor Protocol.

58. On information and belief, Buterin recognized the novelty and importance of the invention, but wanted to keep the ETH cryptocurrency—not BNT—as the medium of exchange. To that end, on information and belief, Buterin began working with Hayden Adams to nurture a competing DEX that was also based on the invention but would allow ETH, the native cryptocurrency of Buterin’s Ethereum blockchain, to remain front and center.

59. In contrast to the Inventors’ decades of experience in technology companies and community currencies, as of mid-2017, Hayden Adams had been recently laid off from his first job out of college and did not even know how to code. Nevertheless, Adams claims to have developed a prototype of the Uniswap Protocol by November 2017. Adams credits Buterin for suggesting renaming the protocol “Uniswap” instead of Unipeg around this time.

60. In April 2018, on information and belief, Adams met Buterin on the sidelines of a conference in South Korea. According to Adams, Buterin provided suggestions for the Uniswap Protocol’s smart contract code, and invited Adams to apply for an Ethereum Foundation grant. Adams received \$100,000 from the Ethereum Foundation just months later. Adams thereafter authored and released a whitepaper regarding the Uniswap Protocol on November 2, 2018, which described it as “a protocol for automated token exchange on Ethereum” that “set[s] prices] automatically using the constant product ($x*y=k$) market maker mechanism.” Adams finally deployed the Uniswap Protocol live in November 2018, and thereafter deployed the Uniswap Interface. A month after the live deployment of the Uniswap Interface, Buterin tweeted that “Uniswap is a *huge* UX improvement over previous DEXes.”

61. Due to Uniswap Labs' use of Plaintiffs' patented invention and support from an industry player, the Uniswap Protocol and associated Uniswap Interface displaced the Bancor Protocol as the largest and most popular decentralized exchange.

B. Defendants' Products Infringe Plaintiffs' Patents

62. Defendants have, without Plaintiffs' authorization, made, used, offered to sell, sold, imported into the United States, and/or instructed others regarding the making, use, sale, or importation of v1-v4 of the Uniswap Protocol (together, "Protocol"). The Protocol is a set of persistent, non-upgradable smart contracts that has been developed by Uniswap Labs and released as four separate versions. Uniswap Labs also develops and maintains a web interface ("Interface") that allows for easy interaction with the Protocol. Each version of the Protocol and the Interface directly infringes (literally or under the doctrine of equivalents), and/or induces the infringement of one or more claims of each of the Asserted Patents. Adams himself has described the Uniswap Protocol as "the specific implementation of an $x*y=k$ market maker that exists on Ethereum today." In Adams' own words, the Uniswap Protocol uses Plaintiffs' patented inventions. On information and belief, Defendant Uniswap Foundation further induces infringement by supporting and encouraging the use of the Protocol, including by OpenZeppelin, Brink.Trade, Atrium Academy, and Gelato.

63. Defendants also, without Plaintiffs' authorization, continue to make, use, offer to sell, sell, import into the United States, and/or instruct others regarding the making, use, sale, or importation of the Protocol and the Interface that directly infringe (literally or under the doctrine of equivalents), and/or induce the infringement of one or more claims of each of the Asserted Patents.

64. As noted below, each element of at least one claim of each of the Asserted Patents is literally present in the Protocol. To the extent that any element is not literally present, each such element is present under the doctrine of equivalents because it performs substantially the same function in substantially the same way to achieve substantially the same result, and any differences between the Protocol and the claim element are insubstantial.

CLAIMS FOR RELIEF

65. The allegations provided below are exemplary and without prejudice to infringement contentions provided pursuant to the Court's scheduling order and/or local rules. In providing these allegations, Plaintiffs do not convey or imply any particular claim constructions or the precise scope of the claims. Plaintiffs' contentions regarding claim constructions will be provided under the Court's scheduling order and/or local rules.

66. The below infringement allegations are based on currently available information and a reasonable investigation of the structure and operation of the Uniswap Protocol and the Interface that allows for easy customer interaction with the Protocol. Plaintiffs reserve the right to modify this description, including, for example, on the basis of information that it obtains during discovery about the Protocol and the Interface. Plaintiffs also reserve the right to add additional accused products based on forthcoming product announcements, product releases, and/or additional investigation.

COUNT I: INFRINGEMENT OF U.S. PATENT NO. 11,107,049

67. Plaintiffs incorporate by reference and re-allege all the foregoing paragraphs of this Complaint as if fully set forth herein.

68. In violation of 35 U.S.C. § 271, Defendants have infringed and are currently infringing, directly and/or indirectly through intermediaries, the '049 patent by making, using, selling, offering for sale, and/or importing into the United States, without authority, products,

methods, and/or systems covered by one or more claims of the '049 patent including, but not limited to, the Protocol and/or the Interface that allows for easy customer interaction with the Protocol.

69. The Protocol and the Interface practice at least claim 1 of the '049 patent. Defendants have infringed and are currently infringing this claim, directly and/or indirectly, literally and/or under the doctrine of equivalents.

70. Exemplary claim 1 of the '049 patent states:

1. A secure ledger network for executing cryptocurrency transactions, the secure ledger network comprising:

at least one hardware processor, a non-transitory machine-readable storage

medium having an executable computer readable program code, the at

least one hardware processor configured to execute the computer-readable program code to perform the following:

receiving, by the secure ledger network, a request to validate a smart contract that determines at least one rule for performing a transaction related to a first cryptocurrency token;

when determining to validate the smart contract, then updating a secure ledger

maintained by the secure ledger network with the smart contract;

receiving, by the secure ledger network, a request to execute a transaction related to the first cryptocurrency token;

performing an execution of the transaction, the execution comprises:

determining a price of the first cryptocurrency token based on a status of the first cryptocurrency token, a status of an other cryptocurrency token, and a reserve ratio constant; and

updating the secure ledger about a completion of the transaction;

wherein the status of the first cryptocurrency token (T_t) comprises a total amount of the first cryptocurrency token in circulation;

wherein the status of the second cryptocurrency token (T_r) comprises a total reserve of the second cryptocurrency token;

wherein the reserve ratio constant (R_r) is predefined and is a ratio between the total reserve of the second cryptocurrency token and a token market cap;

wherein the determining of the price of the first cryptocurrency token comprises setting the price of the first cryptocurrency token as $T_r/T_t * R_r$.

71. The Protocol and the Interface meet each and every element of claim 1.

72. The Protocol and Interface use a secure ledger network for executing cryptocurrency transactions. As Uniswap Labs admits, “Uniswap is an automated liquidity protocol powered by a constant product formula and implemented in a system of non-upgradeable smart contracts on the Ethereum blockchain.” The images below are screen captures illustrating the use of the Protocol via the Interface to add liquidity to a liquidity pool for a pair of assets (in this example, ETH and USDC). The Interface also supports removing liquidity from a pool and swapping assets in a pool.

Uniswap Trade Explore Pool Search tokens

Your positions > New position

New position

Reset v2 position

1 Step 1
Select token pair and fees

2 Step 2
Enter deposit amounts

Select pair
Choose the tokens you want to provide liquidity for. You can select tokens on all supported networks.

ETH USD

Fee tier
The amount earned providing liquidity. All v2 pools have fixed 0.3% fees. For more options, provide liquidity on v4.

Continue

Uniswap Trade Explore Pool Search tokens

Your positions > New position

New position

Reset v2 position

1 Step 1
Select token pair and fees

2 Step 2
Enter deposit amounts

ETH / USD v2 0.3%

Deposit tokens
Specify the token amounts for your liquidity contribution.

2 ETH
\$3,267.88

3254.945134 USD
\$3,254.95

Connect wallet

73. The Protocol operates on hardware processors which are programmed to receive requests to validate smart contracts, to execute transactions, and to update the secure ledger after the completion of a transaction. For example, Uniswap Labs explains that the Protocol is

implemented “as a set of persistent, non-upgradable smart contracts” (*i.e.*, code) that are validated and executed on the Ethereum blockchain, which comprises a plurality of hardware processors.³⁰ In addition, Uniswap Labs provides the code for the Protocol as open source and explains that “[a]nyone can deploy the Uniswap Protocol contracts on any blockchain.”³¹

74. The Protocol is programmed to process transactions by executing smart contracts and recording the resulting transaction on the blockchain. Processing a transaction includes determining the price of a first cryptocurrency token (*e.g.*, an LP token) based on a status of the first token, a status of an other cryptocurrency token (*e.g.*, at least one of the deposited cryptocurrency tokens), and a reserve ratio constant (*e.g.*, the defined ratio between the reserve tokens and the LP tokens required in the Uniswap system). For example, Uniswap Labs describes how the Protocol can be used to provide liquidity using the addLiquidity function in the Protocol’s smart contracts.³² When a liquidity provider deposits a pair of tokens into a liquidity pool, the amount of the LP token received in exchange is determined based on (1) the total supply of LP tokens for the pool, (2) the “reserve” supply of one of the two tokens in the pair deposited, and (3) the combined reserve ratio that corresponds to the ratio of the combined token reserve for the pair of deposited tokens to the market cap of the LP token, which—for the special case of a liquidity pool that holds reserves of two tokens that must be deposited in equal proportions—mathematically resolves to 1. Specifically, the **amount** of the LP token received—which is

³⁰ See <https://blog.uniswap.org/what-is-uniswap> (last visited May 12, 2025).

³¹ *Id.*; see also, *e.g.*, <https://github.com/Uniswap/v2-core/> (last visited May 12, 2025).

³² See, *e.g.*, <https://docs.uniswap.org/contracts/v2/guides/smart-contract-integration/providing-liquidity> (last visited May 12, 2025); <https://docs.uniswap.org/contracts/v2/reference/smart-contracts/router-02#addliquidity> (last visited May 12, 2025); <https://github.com/Uniswap/v2-periphery/blob/master/contracts/UniswapV2Router02.sol> (function addLiquidity) (last visited May 12, 2025).

inversely proportional to the *price* of an LP token³³—is computed as the amount of one of the two tokens deposited, multiplied by the total supply of LP tokens (*i.e.*, T_t) divided by the reserve of the selected deposited token (*i.e.*, T_r), or T_t/T_r .³⁴ This computation is equal to $T_t \cdot R_r / T_r$, and is thus also based on the reserve ratio constant. The *price* of an LP token is the inverse of the computed amount, in other words, $T_r / T_t \cdot R_r$, where the reserve ratio is 1. Accordingly, the Protocol determines the price of the LP token by setting the price equal to $T_r / T_t \cdot R_r$, where the reserve ratio is one.

75. The Protocol therefore infringes at least claim 1 of the '049 patent. The Interface incorporates and includes the Protocol and thus also infringes at least claim 1 of the '049 patent.

76. On information and belief, Defendants have had actual knowledge of their infringement of the '049 patent no later than the filing date of the original Complaint (May 20, 2025).

77. On information and belief, Uniswap Labs had actual knowledge of its and its customers' infringement of the '049 patent or was willfully blind thereto as of the issue date of the '049 patent. For example:

- Plaintiffs pioneered the CPAMM system and, at the time of Defendants' founding, were one of the biggest players in decentralized finance in crypto.
- Uniswap Labs specifically cited Vitalik Buterin's Reddit post as inspiration. Buterin made that Reddit post a month after Plaintiffs met him in person and explained the Bancor Protocol.

³³ The number of LP tokens received is equal to the number of reserve tokens deposited *divided by* the price of one LP token. Thus, the number of LP tokens received per reserve token deposited is the reciprocal of the price per LP token.

³⁴ See, e.g., <https://github.com/Uniswap/v2-core/blob/master/contracts/UniswapV2Pair.sol> (function "mint") (last visited May 12, 2025).

- The non-provisional patent application for the '049 patent was published as U.S. Patent App. Publication No. 2021/0073755 on March 11, 2021. The publication includes claim 4 which recites the same limitations as claim 1 of the '049 patent.

78. Notwithstanding Defendants' actual notice of infringement, Defendants have provided and continue to provide the Protocol and the Interface to Uniswap Labs customers that use the Protocol, and to encourage and support the use of the Protocol and the Interface, with knowledge of or willful blindness to the fact that their actions will induce others, including those customers, to directly infringe the '049 patent. Defendants induce others including their customers to infringe the '049 patent in violation of 35 U.S.C. § 271(b) by encouraging and facilitating others to perform actions that Defendants know to be acts of infringement of the '049 patent with intent that those performing the acts infringe the '049 patent, or with willful blindness to such facts. On information and belief, Defendants, directly and/or through intermediaries, advertise and distribute the Protocol, publish instruction materials, specifications and promotional literature describing operation of the Protocol, and offer technical assistance, training, and/or consulting services regarding use of the Protocol to their customers. At least Defendants' customers and other end users of the Protocol directly infringe the '049 patent by using, without Plaintiffs' authority, the Protocol.

79. On information and belief, Defendants know that the Protocol is especially made or especially adapted for use in the infringement of the '049 patent. The infringing components of these products are not staple articles or commodities of commerce suitable for substantial noninfringing use, and the infringing components of these products are a material part of the invention of the '049 patent. Accordingly, in violation of 35 U.S.C. § 271(c), Defendants are also contributing to the direct infringement of the '049 patent by at least its customers and/or end users

of the Protocol and/or the Interface. The customers and/or end users directly infringe the '049 patent by using, without Plaintiffs' authority, the Protocol and/or the Interface.

80. As a result of Defendants' infringement of the '049 patent, Plaintiffs have suffered, and will continue to suffer, substantial damages. Accordingly, Defendants are liable to Plaintiffs for damages adequate to compensate for Defendants' acts of infringement, in an amount to be proved at trial but in any event not less than lost profits and a reasonable royalty for the use made of Plaintiffs' invention by Defendants under 35 U.S.C. § 284.

81. In addition, Defendants' acts of infringement have caused Plaintiffs irreparable harm that is not compensable by monetary damages. The hardships that an injunction would impose are less than those faced by Plaintiffs should an injunction not issue. The public interest would be served by issuance of an injunction. Thus, Plaintiffs are entitled to a preliminary and permanent injunction against further infringement. Therefore Plaintiffs are entitled to injunctive relief under 35 U.S.C. § 283.

82. Defendants' acts of infringement constitute willful, egregious misconduct, and consequently Plaintiffs are entitled to a discretionary increase of its damages award up to three times the amount found or assessed, costs, and attorney's fees under 35 U.S.C. § 284.

83. Based on the foregoing facts, Plaintiffs request that this Court declare this an exceptional case, and award Plaintiffs their costs and attorney's fees under 35 U.S.C. § 285.

COUNT II: INFRINGEMENT OF U.S. PATENT NO. 11,574,291

84. Plaintiffs incorporate by reference and re-allege all the foregoing paragraphs of this Complaint as if fully set forth herein.

85. In violation of 35 U.S.C. § 271, Defendants have infringed and are currently infringing, directly and/or indirectly through intermediaries, the '291 patent by making, using, selling, offering for sale, and/or importing into the United States, without authority, products,

methods, and/or systems covered by one or more claims of the '291 patent including, but not limited to, the Protocol and/or the Interface that allow for easy customer interaction with the Protocol.

86. The Protocol practices at least claim 1 of the '291 patent. Defendants have infringed and are currently infringing this claim literally and/or under the doctrine of equivalents.

87. Claim 1 of the '291 patent states:

1. A secure ledger network for executing cryptocurrency transactions, the secure ledger network comprising:
at least one hardware processor, a non-transitory machine-readable storage medium having an executable computer readable program code, the at least one hardware processor configured to execute the computer-readable program code to:
receive a request to validate a smart contract that determines at least one rule for performing a transaction related to a first cryptocurrency token;
validating the smart contract;
updating a secure ledger maintained by the secure ledger network with the smart contract;
receive a request to execute a transaction related to the first cryptocurrency token;
perform an execution of the transaction, the execution comprises:
obtaining a status of the first cryptocurrency token comprising a total amount (Tt) of the first cryptocurrency token in circulation, a status of another cryptocurrency token comprising a total reserve (Tr) of the other

cryptocurrency token in a reserve, and a reserve ratio constant (R_r) predefined as a ratio between the total reserve and a token market cap, and determining an amount of at least one of the first cryptocurrency token, and the other cryptocurrency token obtained in exchange of one another based on the status of the cryptocurrency token, the status of the other cryptocurrency token, and the reserve ratio constant; and update the secure ledger about a completion of the transaction.

88. The Protocol and the Interface meet each and every element of claim 1.

89. The Protocol and Interface use a secure ledger network for executing cryptocurrency transactions. As Uniswap admits, “Uniswap is an automated liquidity protocol powered by a constant product formula and implemented in a system of non-upgradeable smart contracts on the Ethereum blockchain.” The images below are screen captures illustrating the use of the Protocol via the Interface to add liquidity to a liquidity pool for a pair of assets (in this example, ETH and USDC). The Interface also supports removing liquidity from a pool and swapping assets in a pool.

The screenshot displays the Uniswap web interface for creating a new liquidity position. At the top, the navigation bar includes the Uniswap logo, a menu icon, and links for Trade, Explore, and Pool. A search bar labeled 'Search tokens' is also present. Below the navigation, the breadcrumb 'Your positions > New position' is shown. The main heading is 'New position', accompanied by 'Reset', 'v2 position', and a settings gear icon. A progress indicator on the left shows two steps: 'Step 1: Select token pair and fees' (active) and 'Step 2: Enter deposit amounts'. The 'Select pair' section instructs users to choose tokens for liquidity provision. Two dropdown menus are shown, with 'ETH' and 'USDC' selected. Below this, the 'Fee tier' section explains that v2 pools have a fixed 0.3% fee. A large 'Continue' button is at the bottom of the form.

Uniswap Trade Explore Pool

Search tokens

Your positions > New position

New position

Reset v2 position

1 Step 1
Select token pair and fees

2 Step 2
Enter deposit amounts

ETH / USDC v2 0.3%

Deposit tokens
Specify the token amounts for your liquidity contribution.

2 ETH
\$3,267.88

3254.945134 USDC
\$3,254.95

Connect wallet

90. The Protocol operates on hardware processors and associated storage media with program code, which are programmed to receive requests to validate smart contracts, to execute transactions, and to update the secure ledger after the completion of a transaction. For example, Uniswap Labs explains that the Protocol is implemented “as a set of persistent, non-upgradable smart contracts” (*i.e.*, code) that are validated and executed on the Ethereum blockchain, which comprises a plurality of hardware processors and associated storage media with program code.³⁵ In addition, Uniswap Labs provides the code for the Protocol as open source and explains that “[a]nyone can deploy the Uniswap Protocol contracts on any blockchain.”³⁶

91. The Protocol is programmed to process transactions by executing smart contracts and recording the resulting transaction on the blockchain. Processing a transaction includes

³⁵ See <https://blog.uniswap.org/what-is-uniswap> (last visited May 12, 2025).

³⁶ *Id.*; see also, *e.g.*, <https://github.com/Uniswap/v2-core/> (last visited May 12, 2025).

determining an amount of a first cryptocurrency token (*e.g.*, an LP token) to be exchanged for an other cryptocurrency token (*e.g.*, each at least one of the deposited cryptocurrency tokens) based on a status of the first token, the status of the other cryptocurrency token, and a reserve ratio constant (*e.g.*, the defined ratio between the reserve tokens and the LP tokens required in the Uniswap system). For example, Uniswap Labs describes how the Protocol can be used to provide liquidity using the `addLiquidity` function in the Protocol's smart contracts.³⁷ When a liquidity provider deposits a pair of tokens into a liquidity pool, the amount of the LP token received in exchange is determined based on (1) the total supply of LP tokens for the pool, (2) the “reserve” supply of one of the two tokens in the pair deposited, and (3) the combined reserve ratio that corresponds to the ratio of the combined token reserve for the pair of deposited tokens to the market cap of the LP token, which—for the special case of a liquidity pool that holds reserves of two tokens that must be deposited in equal proportions—mathematically resolves to 1. Specifically, the *amount* of the LP token received—which is inversely proportional to the *price* of an LP token³⁸—is computed as the amount of one of the two tokens deposited, multiplied by the total supply of LP tokens (*i.e.*, T_l) divided by the reserve of the selected deposited token (*i.e.*, T_r), or T_l/T_r .³⁹ This computation is equal to $T_l * R_r / T_r$, and is thus also based on the reserve ratio constant.

³⁷ See, *e.g.*, <https://docs.uniswap.org/contracts/v2/guides/smart-contract-integration/providing-liquidity> (last visited May 12, 2025); <https://docs.uniswap.org/contracts/v2/reference/smart-contracts/router-02#addliquidity> (last visited May 12, 2025); <https://github.com/Uniswap/v2-periphery/blob/master/contracts/UniswapV2Router02.sol> (function `addLiquidity`) (last visited May 12, 2025).

³⁸ The number of LP tokens received is equal to the number of reserve tokens deposited *divided by* the price of one LP token. Thus, the number of LP tokens received per reserve token deposited is the reciprocal of the price per LP token.

³⁹ See, *e.g.*, <https://github.com/Uniswap/v2-core/blob/master/contracts/UniswapV2Pair.sol> (function “`mint`”) (last visited May 12, 2025).

Accordingly, the Protocol determines the amount of the LP token received based on T_r , T_t , and R_r (where the reserve ratio R_r is one).

92. The Protocol therefore infringes at least claim 1 of the '291 patent. The Interface incorporates and includes the Protocol and thus also infringes at least claim 1 of the '291 patent.

93. On information and belief, Defendants have had actual knowledge of their infringement of the '291 patent no later than the filing date of the original Complaint (May 20, 2025).

94. On information and belief, Uniswap Labs had actual knowledge of its and its customers' infringement of the '291 patent or was willfully blind thereto as of the issue date of the '291 patent. For example:

- Plaintiffs pioneered the CPAMM system and, at the time of Defendants' founding, were one of the biggest players in decentralized finance in crypto.
- Defendants specifically cited Vitalik Buterin's Reddit post as inspiration. Buterin made that Reddit post a month after Plaintiffs met him in person and explained the Bancor Protocol.
- The non-provisional patent application for the '291 patent was published as U.S. Patent App. Publication No. 2020/0027067 on January 23, 2020. The publication includes claim 6 which recites the same limitations as claim 1 of the '291 patent.

95. Notwithstanding Defendants' actual notice of infringement, Defendants have provided and continue to provide the Protocol and the Interface to Uniswap Labs customers that use the Protocol, and to encourage and support the use of the Protocol and the Interface, with knowledge of or willful blindness to the fact that their actions will induce others, including those customers, to directly infringe the '291 patent. Defendants induce others including their customers

to infringe the '291 patent in violation of 35 U.S.C. § 271(b) by encouraging and facilitating others to perform actions that Defendants know to be acts of infringement of the '291 patent with intent that those performing the acts infringe the '291 patent, or with willful blindness to such facts. On information and belief, Defendants, directly and/or through intermediaries, advertise and distribute the Protocol, publish instruction materials, specifications and promotional literature describing operation of the Protocol, and offer technical assistance, training, and/or consulting services regarding use of the Protocol to their customers. At least Defendants' customers and other end users of the Protocol then directly infringe the '291 patent by using, without Plaintiffs' authority, the Protocol.

96. On information and belief, Defendants know that the Protocol is especially made or especially adapted for use in the infringement of the '291 patent. The infringing components of these products are not staple articles or commodities of commerce suitable for substantial noninfringing use, and the infringing components of these products are a material part of the invention of the '291 patent. Accordingly, in violation of 35 U.S.C. § 271(c), Defendants are also contributing to the direct infringement of the '291 patent by at least their customers and/or end users of the Protocol. The customers and/or end users directly infringe the '291 patent by using, without Plaintiffs' authority, the Protocol.

97. As a result of Defendants' infringement of the '291 patent, Plaintiffs have suffered, and will continue to suffer, substantial damages. Accordingly, Defendants are liable to Plaintiffs for damages adequate to compensate for Defendants' acts of infringement, in an amount to be proved at trial but in any event not less than lost profits and a reasonable royalty for the use made of Plaintiffs' invention by Defendants under 35 U.S.C. § 284.

98. In addition, Defendants' acts of infringement have caused Plaintiffs irreparable harm that is not compensable by monetary damages. The hardships that an injunction would impose are less than those faced by Plaintiffs should an injunction not issue. The public interest would be served by issuance of an injunction. Thus, Plaintiffs are entitled to a preliminary and permanent injunction against further infringement. Therefore Plaintiffs are entitled to injunctive relief under 35 U.S.C. § 283.

99. Defendants' acts of infringement constitute willful, egregious misconduct, and consequently Plaintiffs are entitled to a discretionary increase of its damages award up to three times the amount found or assessed, costs, and attorney's fees under 35 U.S.C. § 284.

100. Based on the foregoing facts, Plaintiffs request that this Court declare this an exceptional case, and award Plaintiffs their costs and attorney's fees under 35 U.S.C. § 285.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs respectfully request:

A. That Judgment be entered that Defendants have infringed one or more of the Asserted Patents, directly and indirectly, by way of inducement or contributory infringement, literally or under the doctrine of equivalents;

B. That, in accordance with 35 U.S.C. § 283, Defendants and all affiliates, employees, agents, officers, directors, attorneys, successors, and assigns and all those acting on behalf of or in active concert or participation with any of them, be permanently enjoined from (1) infringing the Asserted Patents and (2) making, using, selling, offering for sale and/or importing the Uniswap Protocol and the Interface that allows for easy customer interaction with the Protocol;

C. An award of damages sufficient to compensate Plaintiffs for Defendants' infringement under 35 U.S.C. § 284;

D. Costs and expenses in this action;

- E. An award of prejudgment and post-judgment interest; and
- F. Such other and further relief as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiffs respectfully demand a trial by jury on all issues raised by the Complaint.

Respectfully submitted,

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Dated: August 11, 2025

By: /s/ Kevin P.B. Johnson

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